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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/804,684

03/19/2004

Michael J. Ziegler

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8171

7590 02/28/2007  
PPG INDUSTRIES, INC.  
Intellectual Property Department  
One PPG Place  
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EXAMINER

SELLERS, ROBERT E

ART UNIT

PAPER NUMBER

1712

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

02/28/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/804,684

Applicant(s)

ZIEGLER ET AL.

Examiner

Robert Sellers

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

This is responsive to the Request for Continued Examination (RCE) filed January 10, 2007 with an amendment canceling claims 23 and 24.

1. The 35 U.S.C. 103(a) rejections of claims 23 and 24 over Watanabe et al. Patent No. 4,522,984 in view of Great Britain Patent No. 1,523,903; and *vice versa* have been overcome by the cancellation of claims 23 and 24.

The text of section 103(a) of Title 35, U.S. Code not included in this action can be found in the non-Final rejection mailed June 20, 2006.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. Patent No. 4,522,984 and Nakamura et al. Patent No. 5,037,899 in view of Japanese Patent No. 53-58536.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. in view of the Japanese patent.

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Japanese patent in view of Watanabe et al. and Nakamura et al.

The rejections are maintained for the reasons of record set forth in the previous Office actions. The arguments and declaration filed January 10, 2007 have been considered but are unpersuasive.

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2. Watanabe et al. (col. 10, Example 1 and col. 11, Table 1, Example 2) show lactone-modified epoxy resins with equivalent weights of 3070 and 3910, respectively, within the confines of claims 4-6. According to column 4, lines 39-43, the lactone reacts only with the hydroxyl groups of the epoxy resin, thereby leaving the epoxy groups unreacted. Therefore, the molecular weights of for the lactone-modified epoxy resins of Examples 1 and 2 are 6140 and 7820, respectively, assuming two equivalents of epoxy groups per molecule, thereby embraced by claims 2, 3 and 9. The declaration addressing the number of epoxy groups in Examples 1 and 2 cannot be verified in the absence of the revelation of the calculations employed in their determination.

3. Based on the equivalent weights and molecular weights of Examples 1 and 2 of Watanabe et al. and the equivalent reactants forming the lactone-modified epoxy resin, the lactone-modified epoxy resin of Watanabe et al. as well as that of Nakamura et al. having an epoxy equivalent weight of as much as 2,500 and number average and a number average molecular weight of as much as 7000 (col. 5, lines 4-7) inherently possesses a melting temperature within the claimed range of from about 40°C to about 65°C.

4. Watanabe et al. (col. 6, lines 67-68) and Nakamura et al. (col. 5, lines 8-10) explicitly discloses the use of the lactone-modified epoxy resins in powder coatings.

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5. Although the epoxy equivalent weight of from 10,000 to 150,000 denoted in claim 21 is not recited, the teachings of Watanabe et al. are not limited solely to the exemplified epoxy equivalent weights. It would have been obvious to prepare the lactone-modified epoxy resin of Watanabe et al. with epoxy equivalent weights within the claimed parameters in order to maximize the amount of polycaprolactone side chains to optimize the flexibility, heat and water resistance, low temperature properties and miscibility (col. 4, lines 39-46).

6. The claims merely require the presence of a lactone-modified epoxy resin, film-forming resin and crosslinker regardless of the crosslinking morphology, thereby embracing the composition of the Japanese patent when the lactone-modified epoxy resin containing two unreacted epoxy groups of Watanabe et al. and Nakamura et al. is employed as the epoxy resin of the Japanese patent. It would have been obvious to employ the lactone-modified epoxy resin of Watanabe et al. and Nakamura et al. as the epoxy resin of the Japanese patent in order to enhance the flexibility, heat and water resistance, low temperature properties and miscibility (Watanabe et al., col. 4, lines 39-40 and Nakamura et al., col. 1, lines 51-55).

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All claims are drawn to the same invention claimed in the parent application prior to the filing of this RCE and could have been finally rejected on the grounds and art of record in the next Office action. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert Sellers whose telephone number is (571) 272-1093. The examiner can normally be reached on Monday to Friday from 9:30 to 6:00. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



Robert Sellers  
Primary Examiner  
Art Unit 1712

rs 2/24/2007